

REMARKS

Reconsideration of the present application is respectfully requested.

In the Office Action, the Examiner rejected claims 1-5 under 35 USC 112, second paragraph as being indefinite, claims 1-2 under USC 102(b) as being anticipated, and claims 3 and 5 under USC 103(a) as being obvious.

Claim Rejections – 35 USC 112

During the interview of September 8, 2004 I received counsel regarding the wording of the claims that is now incorporated into Amendment 1. Consequently, withdrawal of rejection of claims 1-5 based on 35 USC 112 is respectfully requested.

Claim Rejections – 35 USC 102

Withdrawal of rejection of claims 1 and 2 is respectfully requested.

The novelty of this patent application is derived from the combination of a Venturi using a motive air stream to vaporize and mix liquid fuel from a pressurized fuel injector at the throat of the Venturi, facilitating pre-mixing of fuel and air into an internal combustion engine.

The effects of constricted channels on fluid flow were first investigated by Giovanni Battista Venturi (1746-1822). Fluid passing through the tube speeds up as it enters the tube's narrow throat, and the pressure drops. There are countless applications for the principle, including the automobile carburetor, discussed in the "Background" section of the application. It is the unique application of the Bernoulli principle that make the subject application novel. Consequently, although the Venturi is mentioned in other patents, the application is much different than the current invention.

The combination of:

- A pressurized fuel injector;
- Vapor-liquid mixing; and
- Vaporization of the fuel

in the throat of the Venturi, where pressure is reduced due to the Bernoulli affect, is unique to this patent application.

The combination of the aforesaid vapor and liquid mixing using a Venturi and a pressurized liquid fuel injector could not have been anticipated by Ito because the fuel in Ito's patent is in the vapor phase, at approximately atmospheric pressure, and consequently does not involve mixing or vaporizing liquid fuel from a pressurized fuel injector.

All eight claims of Ito's patent pertain to fuel control whereas none of my claims mention fuel control.

Claim Rejections – 35 USC 103

Withdrawal of rejection of claims 3 and 5 is respectfully requested.

The use of a pressurized fuel injector with a gas phase motive fluid would not be obvious to someone with ordinary skill in the art at the time of invention because Beck's device does not involve pressurized, liquid fuel induction into the cylinder of an internal combustion engine at all, but rather, pertains to vapor-vapor mixing in an Exhaust Gas Recirculation system.

Finally, none of Beck's claims overlap with the claims of this application.